REMARKS

Claims 1, 3, 5-8 and 10-12 were pending in this application. Claim 1 is currently amended. Upon entry of this amendment, claims 1, 3, 5-8 and 10-12 will be pending in this application. No new subject matter has been added.

I. Claim Amendments

Amendment and cancellation of certain claims is not to be construed as a dedication to the public of any of the subject matter of the claims as previously presented. No new subject matter has been added.

The amendments presented herein fall within one of the appropriate rationales for entering an amendment after a final rejection, see MPEP 714.13.II. Applicant believes that the amendments presented herein either 1) adopts the examiner's recommendations 2) removes issues for appeal or 3) requires only a cursory review by the Examiner. Accordingly, no showing under 37 C.F.R. 1.116(b)(3) is required.

Claim 1 has been amended to clarify that p and q are independently integers of not less than 1 but not more than 6. Support for these amendments may be found throughout the specification as originally filed, and at least on page 14, lines 13-16; page 15, lines 3-6; and page 18, lines 4-5. Claim 1 has also been amended to comply with proper Markush format according to MPEP § 803.02. Claim 1 has also been amended to add a period at the end of the claim according to MPEP § 608.01(m). No new subject matter has been added.

II. Claim Objections

Claim 1 is objected to as being improper Markush format. Claim 1 has been amended to comply with proper Markush format according to MPEP § 803.02. Therefore, Applicant respectfully requests that this basis for objection be withdrawn.

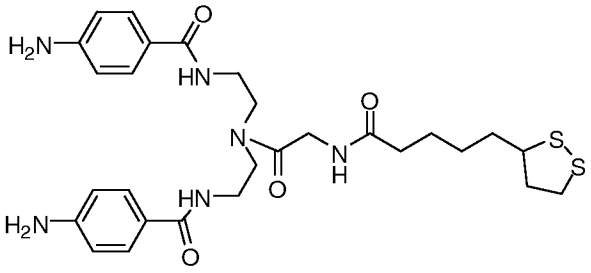
Claim 1 is objected to because there is no period at the end of the claim after the chemical formula. Claim 1 has been amended to add a period at the end of the claim according to MPEP § 608.01(m). Therefore, Applicant respectfully requests that this basis for objection be withdrawn.

III. Claim Rejections Under 35 USC §103(a)

Sumida et al. (JP 2003-083969) in view of Nelson et al. (U.S. Patent No. 6,756,354) and further in view of Yamiya et al. (JP 2002022745A) or Fazio et al (J. Am. Chem. Soc. 2002).

Claims 1, 6-8 and 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sumida et al. (JP 2003-083969) in view of Nelson et al. (U.S. Patent No. 6,756,354) and further in view of Yamiya et al. (JP 2002022745A) or Fazio et al (J. Am. Chem. Soc. 2002).

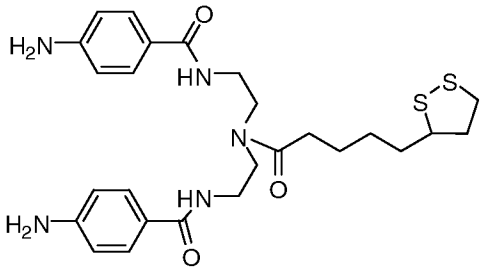
Claim 1 has been amended to clarify that p and q are independently integers of not less than 1 but not more than 6. A representative compound that falls within the amended claims is compound B, the species elected in the response to the Restriction Requirement dated July 29, 2009, where p = 4 and q = 1:



exemplary embodiment, compound B

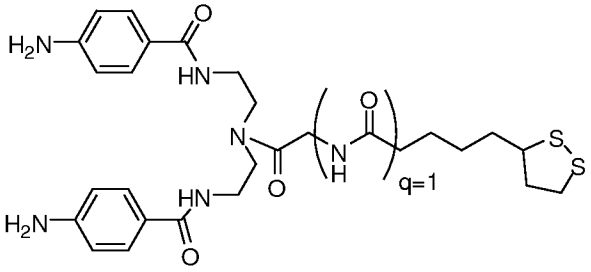
On pages 4-5 of the current Office Action, the Examiner states that "it would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute biotin anchoring group with cyclic –S–S– group (e.g. 1,2-dithiolane, specially lipoic acid) in the tethering residue of Sumida et al., with the expectation of obtaining sensor chip stably associated with the linker compound with a reasonable expectation of success." If one of ordinary skill in the art took compound 2 of Sumida et al. and substituted the biotin

anchoring group with a lipoic acid group as the Examiner suggests, the following compound would be obtained:

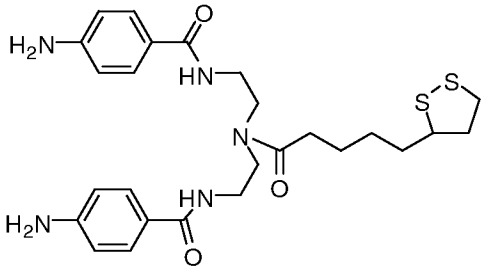


Examiner's compound X

The Examiner's compound X falls outside the scope of the amended claims because compound X lacks an amide functional group required by the amended claims (q must be an integer of not less than 1):

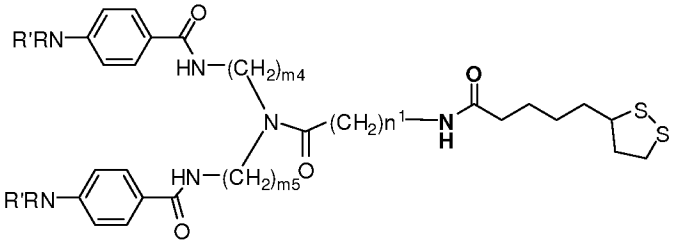


exemplary embodiment, compound B

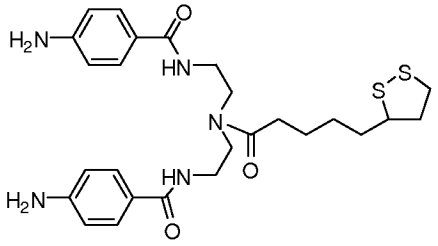


Examiner's compound X

Additionally, the Examiner's compound X also falls outside the scope of claim 7, because compound X lacks the amide functional group between the dithiolane group and branched structure required by claim 7:

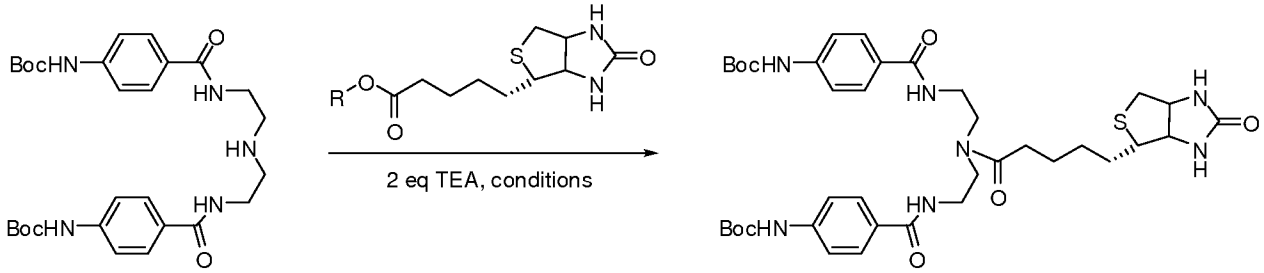


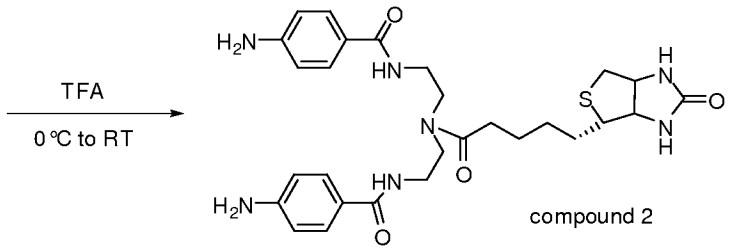
compound (108) of claim 7



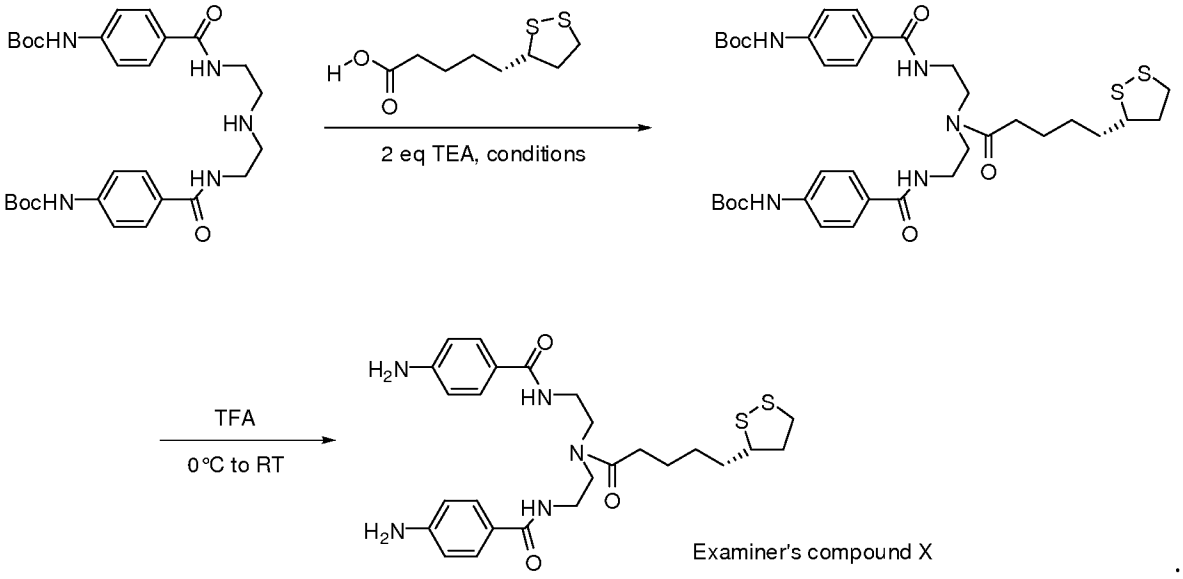
Examiner's compound X

Furthermore, the methods of synthesis of compound B and the Examiner's compound X are different. Sumida et al (JP 2003-083969) disclose compound 2 which is synthesized according to the following steps (see paragraph [0120] of Sumida et al):

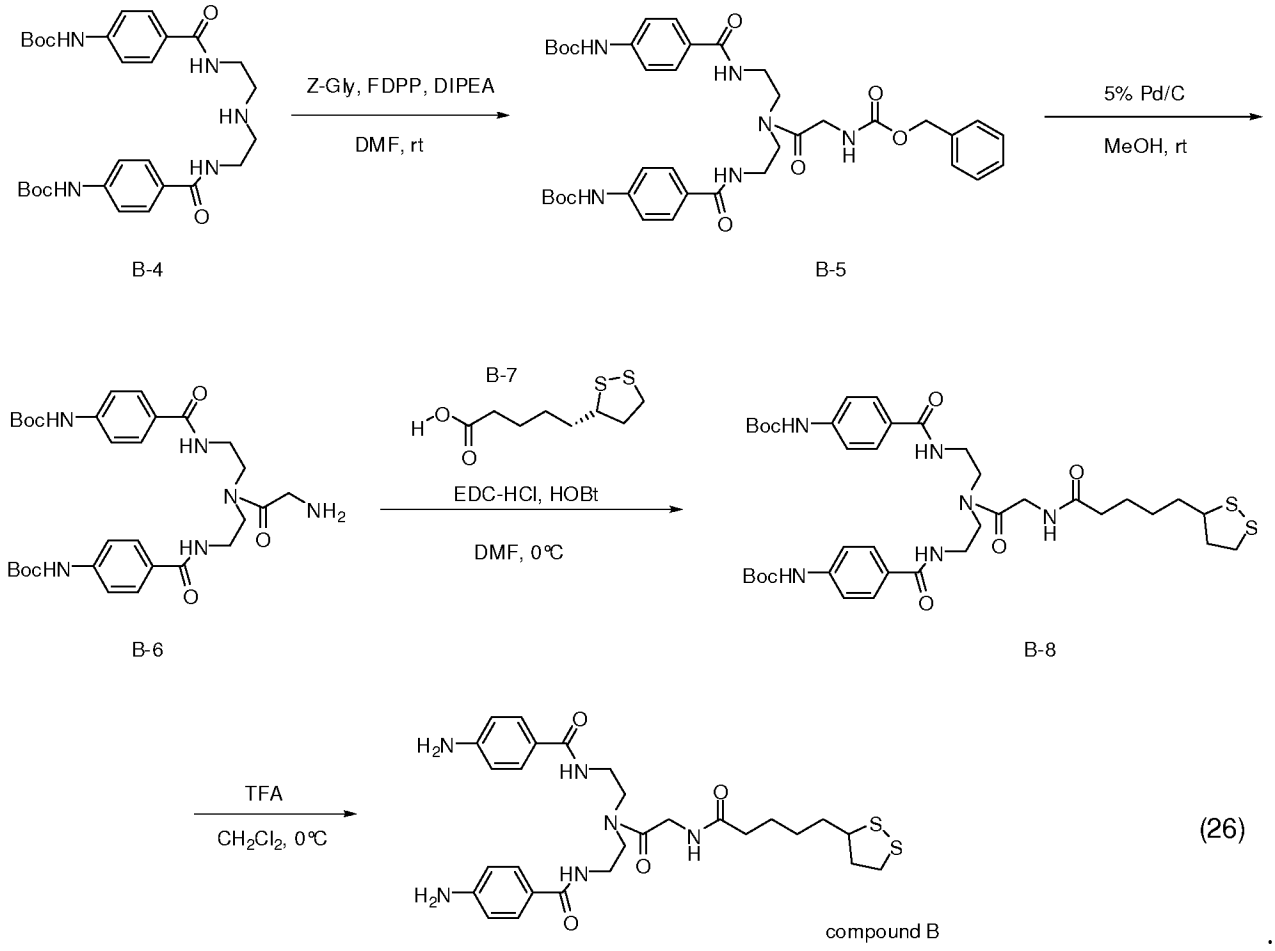




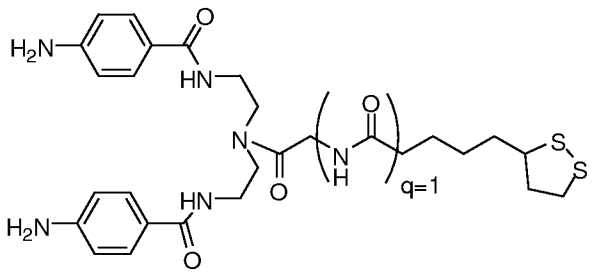
The Examiner states that lipoic acid can replace the biotin anchoring group of Sumida et al. Using the protocol disclosed in Sumida et al., replacing lipoic acid in place of the biotin anchoring group would result in the following reaction sequence:



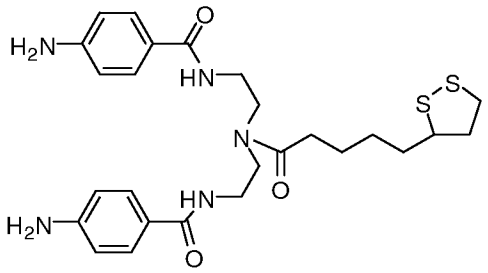
The steps to obtain representative compound B are described in the specification of the present application on page 46, reaction sequence (26):



In reaction sequence (26), above, the steps to obtain compound B-4 are the same as those disclosed in Sumida et al. To synthesize the Examiner's compound X, compound B-4 is reacted with thioctic acid. However, as indicated in reaction sequence (26), the compound of the present invention (compound B) is produced by a condensation reaction between compound B-6 and thioctic acid. Because the two procedures are different, the structure of the compound of the present invention (compound B) is different from that of the Examiner's compound X:



exemplary embodiment, compound B



Examiner's compound X

Sumida et al do not disclose or suggest reaction steps where compound B-4 is converted to compound B-5 and compound B-5 is converted to B-6 in order to synthesize representative compound B. The addition of Nelson et al., Yamiya et al., and Fazio et al., do not cure the deficiency of Sumida et al., as none of the references disclose or suggest reaction steps where compound B-4 is converted to compound B-5 and compound B-5 is converted to B-6 in order to synthesize representative compound B. Therefore, the amended claims are non-obvious over the cited references.

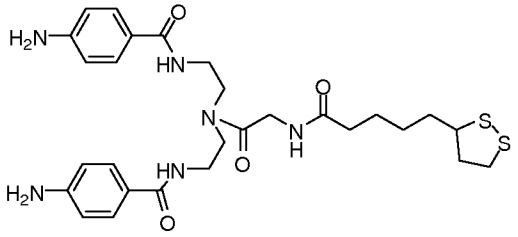
In light of the claim amendments and arguments presented above, Applicant respectfully requests that this basis for rejection be withdrawn.

Hayashi et al (Tentative Lecture Proceeding, Chemical Society of Japan 2001) in view of Nelson et al. (U.S. Patent No. 6,756,354) and further in view of either Yamiya et al. (JP 2002022745A) or Fazio et al (J. Am. Chem. Soc. 2002).

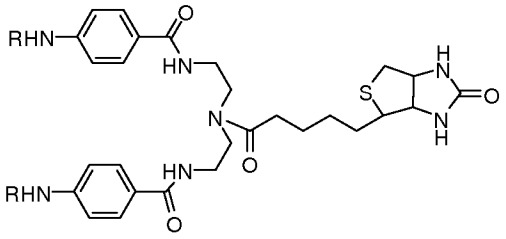
Claims 1, 6-8 and 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hayashi et al (Tentative Lecture Proceeding, Chemical Society of Japan 2001) in view of Nelson et al. (U.S. Patent No. 6,756,354) and further in view of either Yamiya et al. (JP 2002022745A) or Fazio et al (J. Am. Chem. Soc. 2002).

Claim 1 has been amended to clarify that p and q are independently integers of not less than 1 but not more than 6. As discussed above for Examiner's compound X, the compounds 1 and

2 of Hayashi lack an amide functional group as required by the amended claims (q must be an integer of not less than 1), in addition to lacking a dithiolane group:



exemplary embodiment, compound B



Compounds 1 and 2 of Hayashi
Compound 1: R = H
Compound 2: R = sugar chain

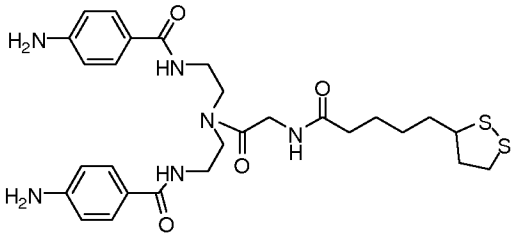
The addition of Nelson, Yamiya, and Fazio do not cure the deficiency of Hayashi, as none of those references disclose or suggest compounds that fall within the scope of the amended claims. Additionally, the compounds 1 and 2 of Hayashi do not render the compounds of claim 7 obvious because compounds 1 and 2 of Hayashi lack the amide functional group required by claim 7. Furthermore, none of the cited references or combination of references, when combined with Hayshi, discloses or suggests reaction steps that would lead to compounds that fall within the amended claims. Therefore, the amended claims are non-obvious over the cited references.

In light of the claim amendments and arguments presented above, Applicant respectfully requests that this basis for rejection be withdrawn.

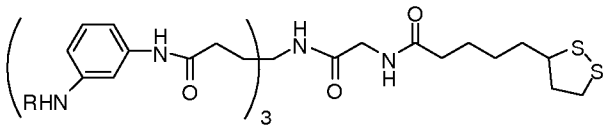
Arano et al (Chemical society of Japan 2002, page 137, 82th Fall Meeting) in view of Sumida et al. (JP 2003-083969) and further in view of Yamiya et al. (JP 2002022745A) or Fazio et al (J. Am. Chem. Soc. 2002).

Claims 1, 6-8 and 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arano et al (Chemical society of Japan 2002, page 137, 82th Fall Meeting) in view of Sumida et al. (JP 2003-083969) and further in view of Yamiya et al. (JP 2002022745A) or Fazio et al (J. Am. Chem. Soc. 2002).

The compounds of Arano do not teach or suggest the compounds disclosed in claim 1. Arano et al. disclose three hydrocarbon derivative chains branching from a central carbon atom. The compounds of the current claims disclose two hydrocarbon derivative chains branching from a central nitrogen atom. Additionally, the Arano et al. compounds contain terminal *meta*-substituted aryl rings and the compounds of the current claims are *para*-substituted:



exemplary embodiment, compound B



Representative Arano compound

The addition of Sumida, Yamiya, and Fazio do not cure the deficiency of Arano. None of these references or combination of references, when combined with Arano, discloses or suggests reaction steps that would lead to compounds that fall within the amended claims, where the two hydrocarbon chains branch from a central nitrogen atom rather than a carbon atom. Therefore, the amended claims are non-obvious over the cited references.

In light of the claim amendments and arguments presented above, Applicant respectfully requests that this basis for rejection be withdrawn.

CONCLUSION

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to withdraw the outstanding rejection of the claims and to pass this application to issue. If it is determined that a telephone conference would expedite the prosecution of this application, the Examiner is invited to telephone the undersigned at the number given below.

In the event the U.S. Patent and Trademark Office determines that an extension and/or other relief is required, Applicant petitions for any required relief including extensions of time and authorizes the Commissioner to charge the cost of such petitions and/or other fees due in connection with the filing of this document to **Deposit Account No. 03-1952** referencing **Docket No. 247322003800**. However, the Commissioner is not authorized to charge the cost of the issue fee to the Deposit Account.

Dated: July 19, 2010

Respectfully submitted,

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